CARDIOVASCULAR FLASHLIGHT

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Acute rupture of a thin cap fibroatheroma: value of multimodality imaging

Roland Klingenberg[1]*, Robert Manka[1,2], Tim Finkenstädt[2], Thomas F. Lüscher[1], Jasmina Alibegovic[1], and Hatem Alkadhi[2]

[1]Department of Cardiology, University Heart Center, University Hospital Zurich, Rämistrasse 100, CH-8091 Zurich, Switzerland and [2]Institute of Diagnostic and Interventional Radiology, University Hospital Zurich, CH-8091 Zurich, Switzerland

* Corresponding author. Tel: +41 44 255 2115; Fax: +41 44 255 8701; Email: roland.klingenberg@usz.ch

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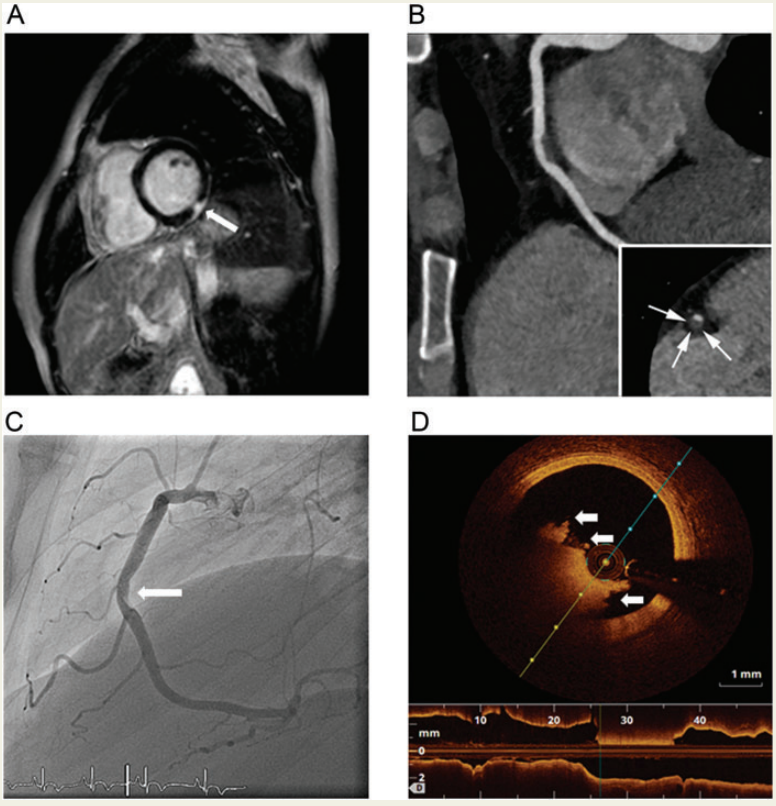
A 37-year-old male patient with no prior medical history presented to our hospital for evaluation of atypical chest pain. His ECG demonstrated minor T inversions in the inferior leads, his blood tests were normal (including D-dimers) except slightly elevated (serial) troponin T. Transthoracic echocardiogram (TTE) was normal whereas cardiac magnetic resonance (cMR) imaging showed mainly epicardial late gadolinium enhancement in the inferolateral region (*Panel A*) without pericardial effusion, compatible with perimyocarditis. Two weeks later the patient presented with recurrent chest pain. Coronary computed tomography angiography (CCTA) demonstrated an isolated soft plaque with high-risk morphology (the so-called napkin sign) with a 50% stenosis in the mid-RCA and outward remodeling (*Panel B*). Catheter coronary angiography was performed showing a 20–50% stenosis in the mid-RCA with luminal haziness (*Panel C*) attributable to intraluminal thrombus formation, confirmed by optical coherence tomography (OCT) (*Panel D*, Supplementary material online, *Movie*). Thrombus aspiration was unsuccessful and hence a drug-eluting stent was placed in the mid-RCA and the patient was subsequently treated for NSTEMI.



In conclusion, this case illustrates the value of multi-modality imaging for comprehensive evaluation of patients with atypical chest pain. While initial cMR imaging was suggestive of perimyocarditis, the later course suggested acute rupture of a plaque in the RCA causing myocardial ischaemia/infarction in the inferolateral left ventricular wall. This is substantiated by the illustration of a soft plaque with ring-like hyperattenuation and central hypodensity in the CTCA cross section being a surrogate of thin cap fibroatheroma, which is considered an unstable plaque type, and the demonstration of fresh thrombotic material by OCT.

Supplementary Material is available at *European Heart Journal* online.